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SUBMITTED: 00

JPRS

TURCHIN, N. Ya.

97-57-9-9/17

AUTHOR:

Alekseyev, S. N. (Candidate of Technical Sciences).

TITLE:

Damage_to Columns_of/Reinforced Concrete Water-Cooling Tower Built From Concrete Liable to Deterioration by Frost. (Razrusheniye kolonn zhelezobetonnoy gradirni iz

nemorozostoykogo betona).

PERIODICAL: Beton i Zhelezobeton, 1957, Nr.9. pp.368-369. (USSR).

ABSTRACT:

The reinforced concrete hyperbolic-shaped water-cooling tower of the TETs, No.16 of the Mosenergo, discussed in an article entitled "Construction of a Reinforced Concrete Hyperbolic Water-Cooling Tower" by I. F. Otlivnoy, Sh.Kh. Kulakhmetov and N. Ya. Turchin (Ref.1), is carried on 72 inclined and N. Ya. Turchin (Ref.1) on 72 inclined pre-cast reinforced concrete columns, octagonal in section, and 340 mm high. The columns are reinforced with 3 steel bars of 24 mm diameter, and spiral reinforcement of 8 mm diameter at 100 mm intervals. Concrete Mark 140 should have been used, but the columns were made from concrete Mark 200, and no frost-reistance tests were carried out. The cement used was of the pozzolana Portland cement type Mark 400 having slump test values of 4-6 cm, with a water/cement ratio of 0.59. 1 m³ of this concrete contains 300 kg cement, 601.8 kg of sand and 1280 kg of aggregate. Test cubes after 7 days showed strength of 113.4 kg/cm2, and after 28 days

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97-57-9-9/17 Damage to Columns of Reinforced Concrete Water-Cooling Tower Built from Concrete Liable to Deterioration by Frost.

198.6 kg/cm². The sand and aggregate were from the Petrovsk pit. The sand was not sieved and the aggregate was not washed. The concrete was mixed in mixers, put into wooden form-work, and consolidated by 1-21 type vibrator. The concrete was hardened by steam-curing at a temperature of 70-80°C for 18-24 hours. The final strength of the concrete was 80-190 kg/cm². The water-cooling tower was put into use in 1955. In the spring of 1957, considerable deterioration of the columns occurred, especially where the cooled water flowed. The columns developed oracks on the surface, and the concrete broke off in slabs, so that the spiral reinforcement was in many cases exposed (see Fig.1). The lower part of the columns were covered by deposits of calcium carbonate, the result of alkalization due to water (see Fig.2). Some cracks were 5-7 cm deep, exposing not only the spiral reinforcement, but also the main reinforcement. This is caused by freezing of porous concrete saturated with water. The low frost-resistance property of the concrete is due to insufficient density caused by the use of pozzolana Portland card 2/3. cement and the high water content. The damaged parts

Damage to Columns of/Reinforced Concrete Water-Cooling Tower Built From Concrete Liable to Deterioration by Frost.

of the column were removed, and the columns were cased in steel mesh, and a fresh layer of concrete applied. Experience shows that for this type of construction, high density concrete should be used to prevent destruction by ice formation in the pores.

AVAILABLE: Library of Congress.

1. Water tower-Construction 2. Concrete-Reinforced 3. Concrete-Deterioration 4. Concrete-Weather factors

Card 3/3

"APPROVED FOR RELEASE: 03/14/2001 CIA-RI

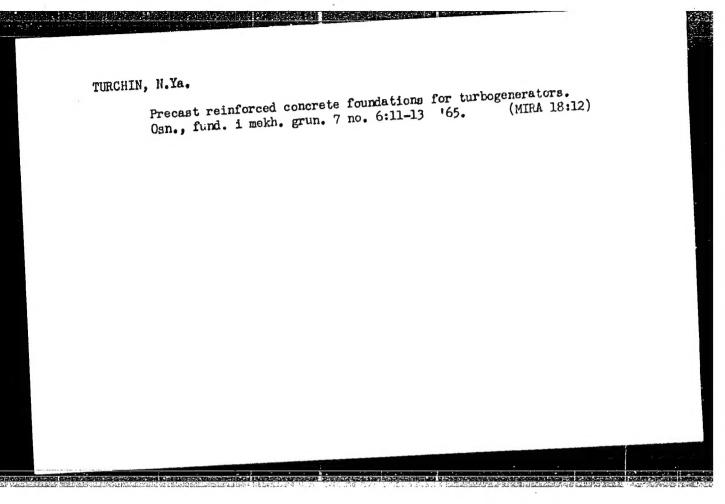
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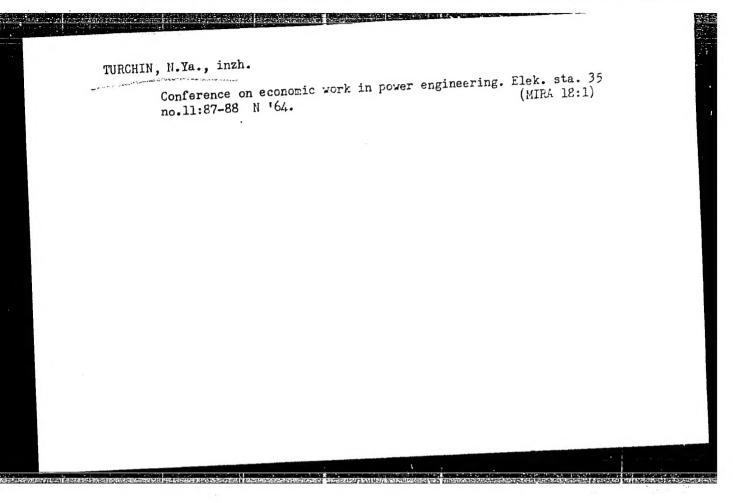
TURCHIN, N.Ya., insh.

Information relative to the construction of desalting equipment.

Elek.sta. 29 no.1:69 Ja '58.

(Feed-water purification)





"APPROVED FOR RELEASE: 03/14/2001 CI

CIA-RDP86-00513R001757520004-0

TURCHIN, N.Ya., insh.

Ceramic radiating pannels for drying surfaces in insulating and finishing operations. Energetik 13 no.3:7-8 Mr '65. (MIRA 18:7)

TURCHIN, N.Ya., inzh.

Conference of power engineering workers on the increase of the technological level and overall mechanization in power system construction, logical level and overall mechanization in power system (MIRA 17:12)

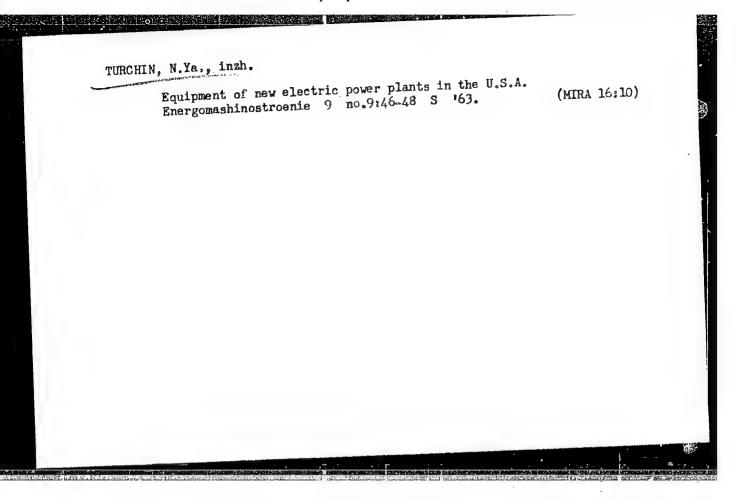
Elek. sta. 35 no.8:87-88 Ag '64.

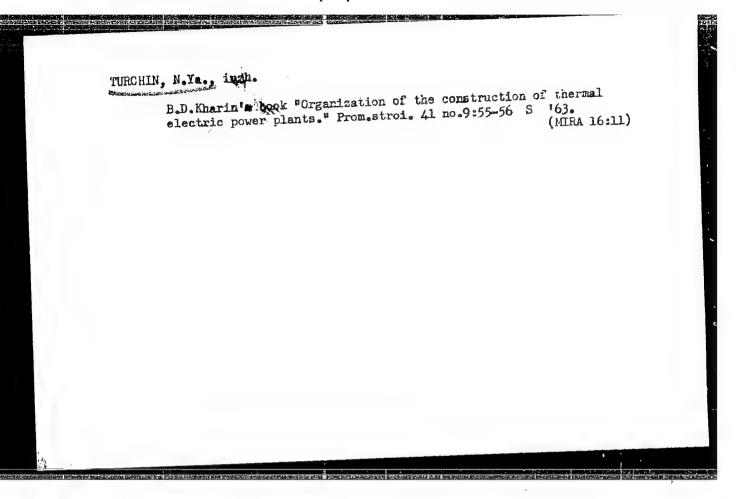
ZAYDEL!, V.A., kand. tekhn. nauk; TURCHIN, N.Ya., inzh.;

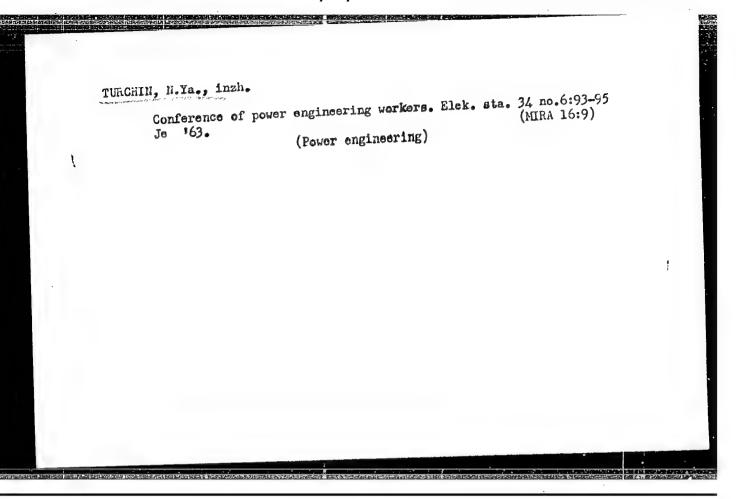
LATYSH, D.I., inzh.

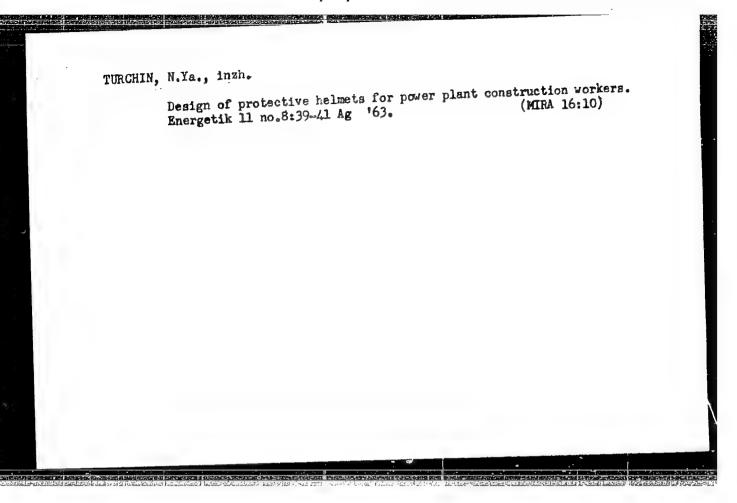
"Design and construction of thermal electric power plants"
by I.P. Kuptsov, IU.R. Ioffe, Reviewed by V.A. Zaidel!,
by I.P. Kuptsov, IU.R. Ioffe, Reviewed by V.A. Zaidel.
N.IA. Turchin, D.I. Latysh. Elek. sta. 34 no.7:91-95 J1 '63.

(MIRA 16:8)









TURCHIN, N. Ya., inzh.

Results of the installation and start of new 150Mw. and 200 Mw. blocks. Energ. stroi. no.31:18-28 162. (MIRA 16:7)

1. Moskovskiy filial Vsesoyuznogo instituta po proyektirovaniyu organizatsiy energeticheskogo stroitel'stva.

(Electric power plants)

TURCHIN, Nikolay Yakovlevich; SEMENOVA, V.P., inzh., red.;

(Start of thermal electric-power plants in cold weather)
Iz opyte puska teplovykh elektrostantsii v zimnikh usloviakh. Moskva, Orgenergostroi, 1962. 66 p.

(Electric power plants—Cold)
(Weather operation)

TURCHIN, N.Ya.

Standardize stock temporary structures. Prom.stroi. no.10:27-30 '62. (MIRA 15:12)

l. Moskovskiy filial Vsesoyuznogo instituta po proyektirovaniyu organizatsiy energeticheskogo stroitel stva.
(Buildings, Portable)

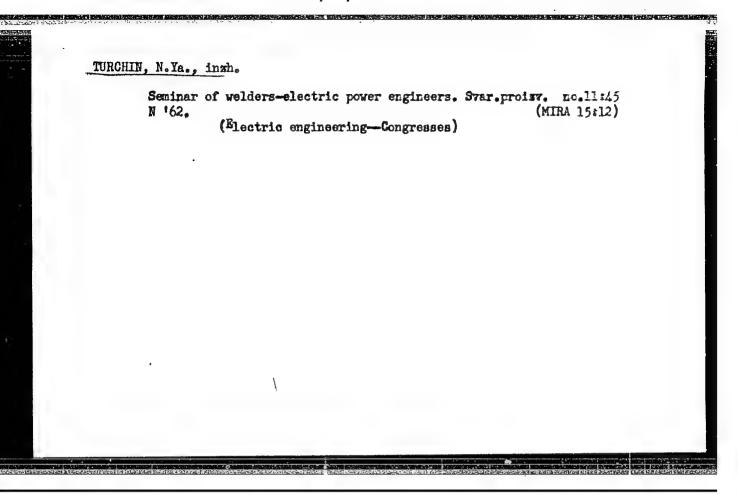
Mechanization of operations in the construction of thermal electric plants and electric transmission lines. Mekh.stroi. 19 no.12:7-9 D '62. (MIRA 15:12) (Electric power plants) (Electric lines)

TURCHIN, N.Ya., inzh.

Seminar on welding. Elek.sta. 33 no.11:94-95 N '62.

(Welding-Congresses)

(Welding-Congresses)



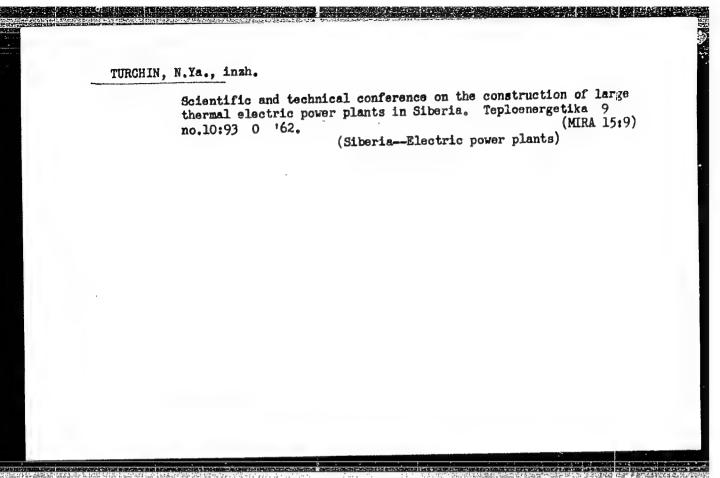
TURCHIN, N.Ya., inzh.

Electric lighting of construction and installation sites.

Svetotekhnika 9 no.1:24-27 Ja '63. (MIRA 16:1)

1. Vsesoyuznyy institut po proyektirovaniyu organizatsiy energeticheskogo stroitel'stva.

(Electric lighting)



TURCHIN, N.Ya., inzh.

Simplify underground communications. Energ. stroi. no.22:25-27
161. (MIRA 15:7)

l. Glavnoye upravleniye po stroitel'stvu i montazhu teplovykh elektrostantsiy Urala i Sibiri Ministerstva stroitel'stva elektrostantsiy SSSR.

(Underground construction) (Electric power plants)

TURCHIN, N.Ya., inzh.

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From practices of heat supply to the starter unit at the Nazarovo State Regional Electric Power Plant in connection with a start-up under winter conditions. Energ.stroi. no.25:45-50 *61.

1. Glavnoye upravleniye po stroitel stvu i montazhu teplovykh elektrostantsiy Urala i Sibiri Ministerstva Stroitel'stva elektrostantsiy SSSR.
(Nazarovo--Electric power plants--Cold weather operations)

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TURCHIN, N.Ya., inzh. Heating the starting chambers of the main buildings of thermal electric plants during the starting period. Energ. stroi. no.20:

164-165 61.

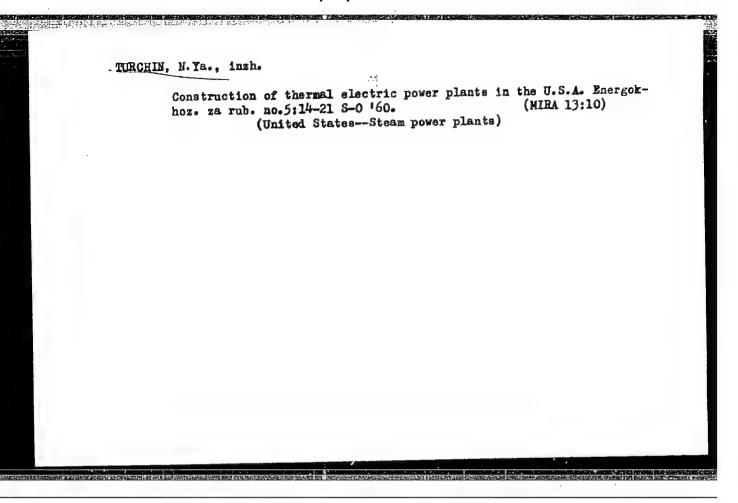
(Electric power plants)

(MIRA TERM

*K-welding method for high-pressure pipelines in the United States.

Svar. proizv. no.3:46-47 Mr. *61. (MIRA 14:3)

(United States—Pipelines—Welding)



TURCHIN, Nikolay Yakovlevich; KAYETANOVICH, M.M., red.; VORONIN, K.P., tekhn. red.

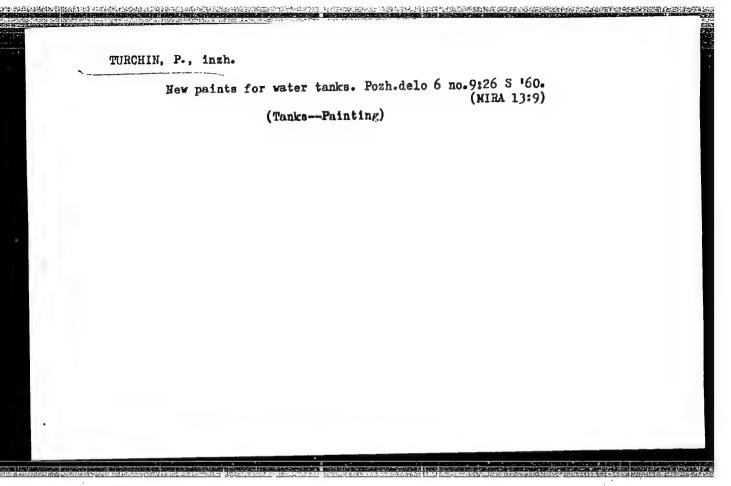
[Construction of substations and the electrical units of the station] Scoruzhenie podstantsii i e'ektricheskoi chasti stantsii.

Moskva, Gos. energ. izd-vo, 1961. 287 p. (MIRA 14:7)

(Electric substations)

TURCHIN, Nikolay Yakovlevich; TARASOV, N.Ya., red.; DZHANIBEKOV, G.G., red.; LARIOHOV, G.Ye., tekhn.red.

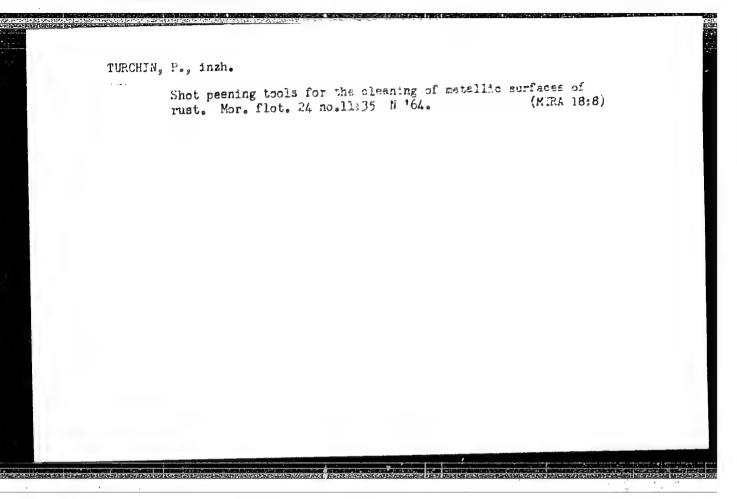
[Construction of hydraulic-engineering structures at thermal power plants] Sooruzhenie gidrotekhnicheskikh obmektov teplovykh elektrostantsii. Pod red. N.IA.Tarasova. Moskva, Gos.energ. izd-vo. 1960. 275 p. (MIRA 13:9) (Steam power plants) (Hydraulic engineering)

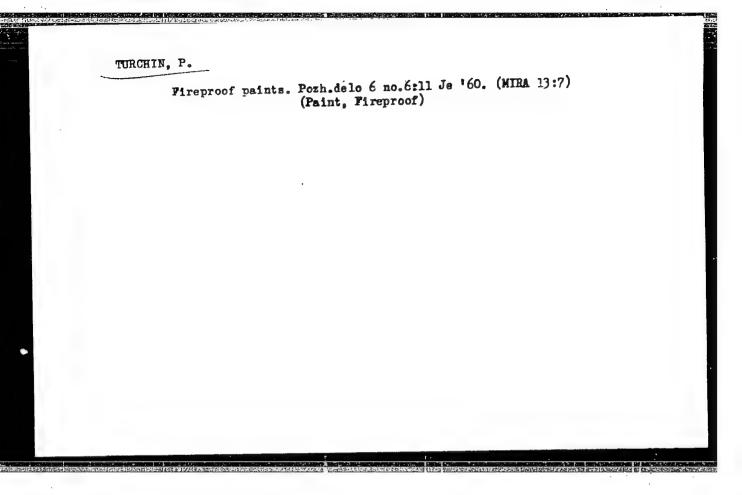


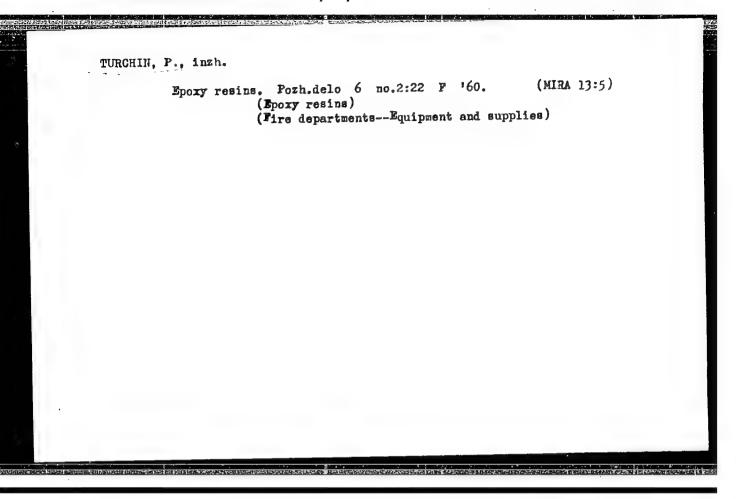
TURCHIN, P., inzh.

Mastic flooring for ship decks. Mor. flot 25 no.2:39 F '65.

(MIPA 18:2)







TURCHIN, P.

New method for protecting steel pipes against corrosion. Mor. flot 19 no.5:27-28 My '59. (MIRA 12:7)

1. Starshiy inzh. Glavsudkhoza Ministerstva morskogo flota. (Pipe, Steel--Corrosion)

TURCHIN, P. Successes of model sirplane builders in the people's democracies. Kryl. (MCRA 6:7) rod. 4 no.8:21 Ag '53. (Europe, Eastern-Airplanes-Models) (Models-Airplanes-Europe, Eastern)

TURCHIN, P.; ASSOROV, F., ekonomist.

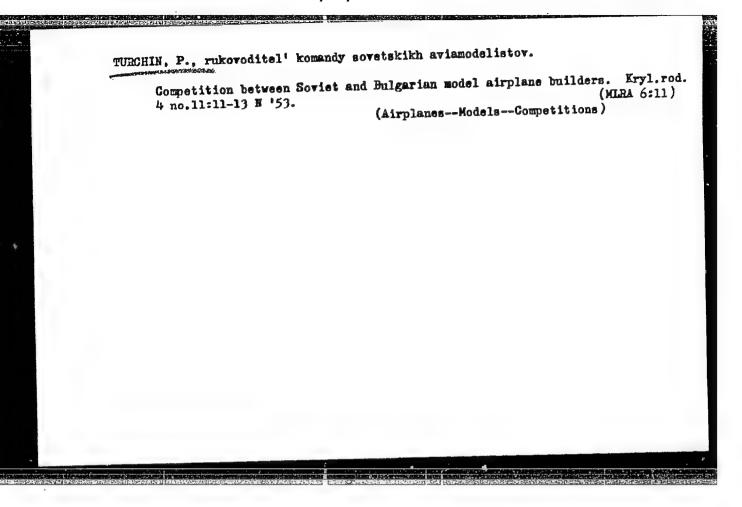
Serious shortcomings in a much-needed book ("Physical and chemical methods of extinguishing fires on ships" by V.L. Poliakov. Reviewed by P. Turchin, F. Assorov). Mor. flot 18 no.9:30-31 S '58.

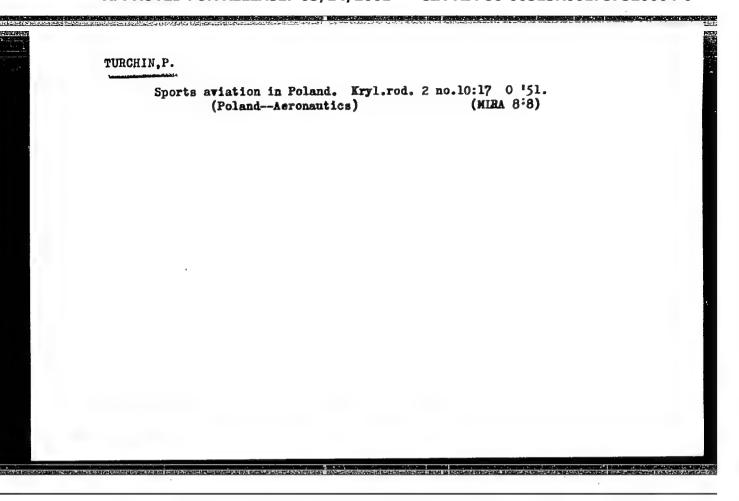
(MIRA 11:10)

1.Starshiy inzhener Glavnoge upravleniya sudovoge khozyaystva
Ministerstva merskogo flota (for Turchin). 2. Otdel Ministerstva
morskogo flota (for Assorov).

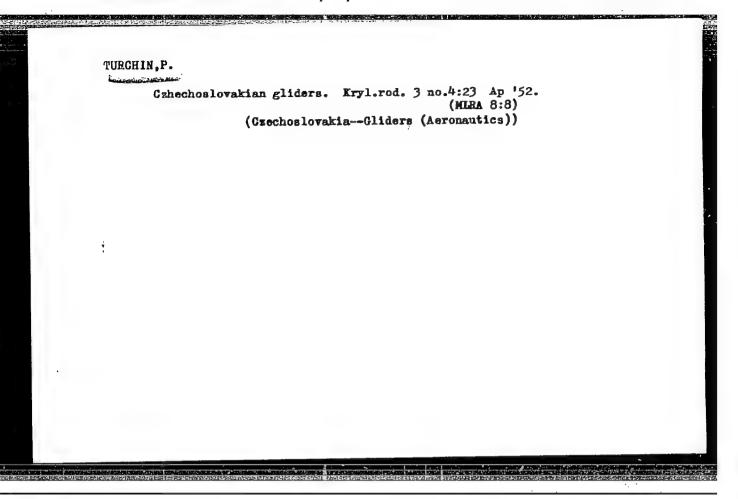
(Ships--Fires and fire prevention)

(Poliakov, V.L.)





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TURCHIN, P., starshiy inzh.

Use of seagoing vessels of steel pipes with corrosion-protection coatings. Mor. flot 21 no.4:38-39 Ap '61. (MIRA 14:4)

1. Glavsudkhoz Ministerstva morskogo flota.

(Marine pipe fitting—Corrosion)

(Protective coatings)

- 1. TURCHIN, P.
- 2. USSR (600)
- 4. Cranks and Crankshafts
- 7. Crankshafts from modified cast iron, Mor.flot 13 no. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

TURCHIN, P.

Progressive method of wood drying in nonaqueous fluids. Mor.flot
20 no.10:33 0 '60. (MIR4 13:10)

1. Starshiy inzhener Glavsudkhoza Ministerstva morskogo flota. (Ships--Maintenance and repair) (Drying agents)

TURCHIN, P., starshiy inzhener

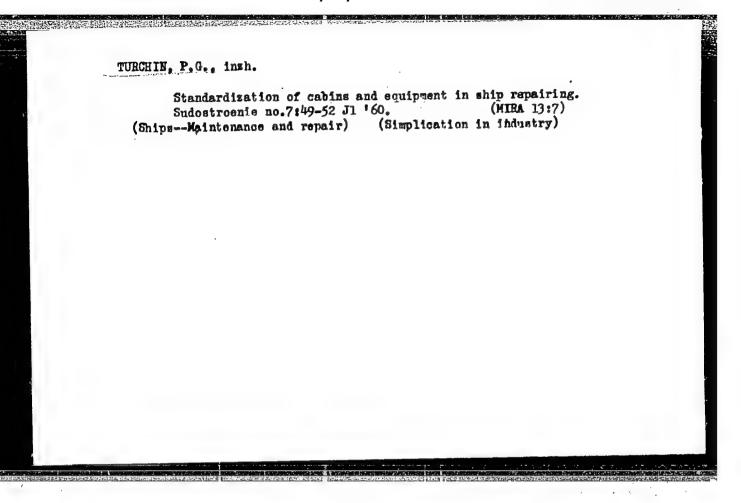
"A boatswain's manual" by V. Alekseiuk and others. Mor. (MIRA 15:7)

1. Glavnoye upravleniye sudovogo khozyaystva i sudoremontnykh zavodov Ministerstva morskogo flota.

(Seamanship)

Modern means of personal protection in cleaning and painting operations. Mor. flot 22 no.6:33 Je '62. (MRA 15:7)

1. Glavnoye upravleniye sudovogo khozyaystva i sudoremontnykh zavodov Ninisterstva morskogo flota. (Occupations, Dangerous—Safety appliances) (Ships—Maintenance and repair)



STRIZHEVSKIY, Semen Yakovlevich, kand. tekhn. nauk; TURCHIN, P.Ye., red.; KHOTIMSKIY, P.M., red.; ROZHKO, K.M., red.1-leksikograf; PLAKSHE, L.Yu., tekhn. red.

[French-Russian dictionary of aviation and technical terms] Frantsuzsko-russkii aviatsionno-tekhnicheskii slovar'. Moskva, Fizmatgiz, 1963. 578 p. (MIRA 17:2)

KRASMOBAYEV, L. (g.Odessa); KOROBCHENKO, E. (Riga); KULIK, I.; TALLO, K. (O42518) (g.Talliam); KHAYYERDAL, Tor [Heyerdahl, Thor]; CAUKHMAN, R. (UA3CH) (Moskva); TURCHIN, V. (G. Noveressiysk).

Use radio communication on boat trips. Radio no.2:24-25 F '57. (MLDA 10:3)

1. Starshiy inzhener radiokluba Dobrovel'noge obshchestve sodeystviya armii, aviatsii i floty (for Krasnobayev).2. Starshiy inzhener radiekluba Dobrovol'noge obshchestva sodeystviya armii, aviatsii i fletu Latviyskoy SSR (for Korebchenko).

(Radio in navigation)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

107-57-2-29/56

AUTHOR: Turchin, V. (Novorossiysk)

"Urozhay" Radio Station on a Cutter. Radio Amateurs' Experience. TITLE:

Radio Communication Should Be Used on Boat Trips

(Radiostantsiya "Urozhay" na katere. U radiolyubiteley yest' opyt. Ispol'zovat' radiosvyaz' v shlyupochnykh pokhodakh)

PERIODICAL: Radio, 1957, Nr 2, p 25 (USSR)

ABSTRACT: "Urozhay"-type radio stations are successfully used on fishing ships of "Azcherrybflot" for communication within the 50- to 60-km range. A slight remodelling of the antenna system adapted for ship

operation is mentioned in the article.

AVAILABLE: Library of Congress

Card 1/1

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

I VRCHIN, V.F.

AUTHOR:

Rydnik, V. L.

64-8-14/19

TITLE:

Conference on the Question of the Exploitation of Wastes

of Soda Production and the Reduction of Their Quantity

(Soveshchaniye po voprosu ispol'zovaniya otkhodov sodovogo

proizvodstva i umen'sheniya ikh kolichestva).

PERIODICAL:

Khimicheskaya Promyshlennost', 1957, Nr 8, pp. 50-51 (USSR)

ABSTRACT:

The conference took place in Khar'kov in September 1957. The conference was called by the Allunion Association for Chemistry imeni D. I. Mendeleyev and the scientific research institute for basic chemistry (NIOkhim). The lectures and reports delt with the results of the works carried out in the years 1954 up to 1957. These works concerned the

protection of the North-Donets river and of the underground waters around the Don against contaminations by the waste waters of the chemical factories in the Donbass. Certain successes were obtained in the working out of processes for

the exploitation of the chloride refuse of the soda

production and of the production of a series of goods (calcium chloride, barium chloride, and others more) from the latter.

Plans were worked out for the deduction of the waste waters from the chemical works directly into the Sea of Azof, without

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PARTER COMMENSAGEMENT OF STREET

Conference on the Question of the Exploitation of Wastes of Soda Production and the Reduction of Their Quantity

64-8-14/19

touching the North-Donets. Following shortcomings were detected: still great quantities of chloride solutions are discharged into the water reservoirs which causes great damage to agriculture, fish-, water-, and energy economy. On the other hand, however, there is a great shortage of calcium chloride as good, of that substance that forms the main component of the waste of the soda production. It was found that the present production of calcium chloride is completely insufficient. V. F. Turchin from the NIUIF (scientific research institute for fertilizers, insecticides and fungicides) gave in his report the results of the many years' investigations of the application of the ammonium chloride as fertilizer. The possibility of using the latter as fertilizer before the seed in the regions of the neutral and alkaline soils (Ukraine, North-Caucasus, West-Siberia, etc.) was detected. It would be expedient to increase up to 1960 the production of ammonium chloride up to 270,000 tons (80,000 tons nitrogen). A new variant of the soda production was worked out. It is based upon the application of dolomite

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Conference on the Question of the Exploitation of Wastes of Soda Production and the Reduction of Their Quantity

64-8-14/19

instead of limestone or chalk. It was found that for the stopping of the salting of the North-Donets with chlorids refuse it is necessary to build a main pipe-line from the Donbass to the Sea of Azof.

AVAILABLE:

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Card 3/3

CIA-RDP86-00513R001757520004-0 "APPROVED FOR RELEASE: 03/14/2001

i erentu, v. t.

AUTHOR:

TURCHIN, V.F.

TITLE:

Multiphonon Processes in Crystals. (Mnogoformy)e proteessy v kristallakh, Russian)

PERIODICAL:

Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol 33, Nr 7,

pp 124-131 (U.S.S.R.)

ABSTRACT:

In theory the differential cross section is computed for:

1.) Unelastic neutron scattering by orystals with emission of any number of phonons.

2.) Unelastic neutron scattering by orystals with absorption of any number of phonons.

The functions obtained are tested on the basis of two examples:

1.) Scattering of "cold" neutrons by hot material.

2.) Scattering of neutrons by cold material.

The functions obtained are applicable also to the scattering of fast neutrons by the free nucleus. (With 1 Illustration and 1 Slavic Reference).

ASSOCIATION: PRESENTED BY

SUBMITTED:

AVAILABLE:

Not given 12.12.1956

Library of Congress

Card 1/1

89-3-3/30

/UKCHIN V.F

AUTHOR:

.Turchin. V. F.

TITLE:

Multiple-Scattering Corrections in Spherical and Ring Geometries (Popravki na mnogokratnoye rasseyaniye v sfericheskoy

i kol'tsevoy geometriyakh)

PERIODICAL:

Atomnaya Energiya, 1958, Vol. 4, Nr 3, pp. 244 - 249 (USSR)

ABSTRACT:

A method is given of how to apply corrections in multiple-scattering as a consequence of the measured angular distri-

bution of elastically scattered neutrons.

It is assumed that the mean neutron path in the medium in which the scattering takes place is comparable with the mean free length of path of neutrons, but that this value is not

exceeded in any case.

In the beginning the probability for double-scattering is calculated by direct calculation of the integrals, and the probability for a triple- and multiple scattering is estimated; this is done for a spherical and a ring-shaped cross section of isotropic neutron scattering. For the case of an isotropic neutron scattering - the neutron energy amounting to

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Multiple-Scattering Corrections in Spherical and Ring Geometries

several MeV - the scattering cross section can be represented by a sum $\sigma(\Theta) = \sigma_1(\Theta) + \sigma_2(\Theta)$, where $\sigma_1(\Theta)$ denotes the value in the frontal direction and $\sigma_2(\Theta)$ is more or less isotropic. Therefore all processes of elastic scattering can descriptively be divided into 2 groups, while all cases of multiple scattering can be divided into 4 groups. The probability of double scattering of all 4 groups can be calculated by means of the results which had been obtained in the isotropic scattering. Analogously to this the tripleand multiple scattering can be classified. There are 5 figures.

SUBMITTED:

March 5, 1957

AVAILABLE:

Library of Congress

1. Neutrons-Scattering-Mathematical analysis

Card 2/2

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

TURCHIN.

AUTHOR:

Turchin, V. F.

56-1-30/56

TITLE:

The Excitation of the Optical Oscillations of a Crystal by Slow Neutrons (Vozbudzhdeniye medlennymi neytronami

opticheskikh kolebaniy kristalla)

PERIODICAL:

Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958

Vol. 34, Nr 1, pp. 219-220 (USSR)

ABSTRACT:

In multiatomic crystals not only the a ustic but also the optical oscillations of the lattice are excited in the scattering of neutrons. In this connection the identification of the different branches of the dispersion function $\omega(\overline{q})$ due to the high experimental errors generally is very difficult or altogether impossible. But the following can be shown; When the velocity v of the neutrons is higher than the maximum velocity c_{\max} of the sound and when the neutrons incide on the crystal under a Bragg angle, the reflected beam beside the elastically scattered neutrons only contains such neutrons which are scattered on the optical and not on the a ustic branches of the oscillations. This fact can be used for the experimental determination of the optic frequencies. Due to the inevitable angle difference

Card 1/3

The Excitation of the Optical Oscillations of a Crystal by Slow Neutrons

56-1-30/56

△ in the neutron beams the real spectrum of the scattered neutrons will contain the energies E - h ω of the neutrons exciting the a ustic oscillations. In this connection E signifies the initial energy of the neutrons. The author here examines which restriction the separation of the optical oscillations from the a ustic ones signifies for Δ . The author here finds the condition $\triangle \ll h\omega_{\rm opt}/mo^2$. The cross section of scattering with excitation of the oscillations belonging to an optical branch is calculated. The cross section of this process calculated for an elementary cell is written down. The frequency of the oscillations is in the optical oscillations only comparatively little dependent on the wave vector d of the emitted phonon. In NaCl, e.g., this frequency changes by no more than 20% in the entire variation range of \vec{q} . The cross section of the process calculated under these conditions is written down. Finally the excitation of the longitudinal optical oscillations in a NaCl-crystal is discussed as example. The differential cross sections of the scattering on a NaCl-molecule found in this manner are numerically given here. There are 2 references, all of which are Slavic.

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The Excitation of the Optical Oscillations of a Crystal by 56-1-30/56 Slow Neutrons

SUBMITTED:

October 22, 1957

AVAILABLE: Library of Congress

Card 3/3

DAVIDSON, G.O.; PROKHOROVA, L.B. [translator]; MOROZOV, V.N. [translator];

TURCHIN, V.F. [translator]; POPOVA, M.F., red.

[Biological effects of whole-body gamma radiation on human beings]

Biologicheskie posledstviia obshchego gamma-oblucheniia cheloveka.

Pod red. M.F. Popovoi. Moskva, Atomizdat, 1960. 197 p.

(MRRA 14:8)

1. Johns Hopkins University. Operations Research Office.

(RADIOACTIVE FALLOUT) (GAMMA RAYS—PHYSIOLOGICAL EFFECT)

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

MARCHUK, Guriy Ivanovich; Prinimal uchastiye TURCHIN, V.F.; VORONOVA, L.I., red.; MAZEL', Ye.I., tekhn. red.

1 18 300

[Calculation methods for nuclear reactors] Metody rascheta iadernykh reaktorov. Moskva, Gos. izd-vo lit-ry v oblasti atomnoi nauki i tekhniki, 1961. 666 p. (MIRA 14:11)

(Nuclear reactors)

38339

\$/058/62/000/005/030/119

A001/A101

26.2241

AUTHOR:

TITLE:

Turchin, V. F.

Solution of the equation of neutron moderation by means of conjugat-

ed moments

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 42, abstract 5B331

(V sb. "Neytron.fizika", Moscow, Gosatomizdat, 1961, 66-73)

The approximate method for solving moderation equation of Greyleng-Gertsel', based on expanding neutron flux into a Taylor series, is applicable to a very restricted region (insignificant flux variation within energy range where scattering functions are different from zero). The author uses global representation of the flux within the range of integration instead of local representation given by Taylor series. This leads to solution of moderation equation by the method of finite differences. Neutrons are considered possessing energies essentially exceeding the moderator temperature, i.e., in most cases neutron loses its energy colliding with the moderator. The neutron scattering density is represented by a second-order parabola. As a result, a recurrent relation is obtained for scattering density which includes conjugated logarithmic

Solution of the equation of neutron ...

S/058/62/000/005/030/119 A001/A101

moments of energy loss. The stability and accuracy of the method is checked for the case when neutron energy is so high that the known scattering function on a free fixed nucleus can be used. The method is applicable up to very large absorptions, and its accuracy is incomparably higher than in the Greyleng-Gertsel' method. The author recommends to employ the method for calculating neutron spectrum in superthermal energy region where the scattering function has a complicated appearance.

B. Bergel'son

[Abstracter's note: Complete translation]

Card 2/2)

32980 \$/641/61/000/000/007/033 B104/B102

26.2242

AUTHOR:

Turchin, V. F.

TITLE:

Neutron Scattering from crystals in incoherent approximation

SOURCE:

Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik statey.

Moscow, 1961, 74 - 91

TEXT: A study of the incoherent approximation of the differential scattering cross section $d^2\sigma/dEd\Omega$ shows that, in the calculation of reactors, incoherent approximation can be used only for inelastic neutron scattering. With elastic scattering the interference of neutron waves has to be taken into account. At very small initial neutron energies E_o , the incoherent approximation error in the total elastic scattering cross section is less than 20%. If E_o is close to E_{crit} , the error is approximately 4%. At higher E_o , the error is decreased as $1/E_o$

Card 1/4

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Neutron scattering from ...

 $\frac{\frac{d^{3}\sigma_{n_{1},n_{0}}}{dE\,d\Omega} = \frac{\sigma_{o}}{4\pi} \left(1 + \frac{1}{\mu}\right)^{2} \frac{k}{k_{0}} e^{-2W} \times}{\times \sum_{\{q_{i}t_{i}\}}^{n_{1}} \prod_{i=1}^{h^{3}} \frac{h^{3} (\kappa e_{q_{i}t_{i}})^{3} (n_{q_{i}t_{i}}+1)}{2\mu mN e_{q_{i}t_{i}}} \times \prod_{i=n_{k}+1}^{n} \frac{h^{3} (\kappa e_{q_{i}t_{i}})^{2} n_{\eta_{i}t_{i}}}{2\mu mN e_{q_{i}t_{i}}} \times} \times \\ \times \delta \left(8 - \sum_{i=1}^{n} e_{q_{i}t_{i}} + \sum_{i=1}^{n} e_{q_{i}t_{i}}\right),$

where

 $W = \frac{1}{2} \sum_{qt} \frac{h^2 \left(\kappa e_{qt} \right)^3}{\mu m N \varepsilon_{qt}} \left(n_{qt} + \frac{1}{2} \right). \tag{2}$

is obtained for the differential neutron scattering cross section for a monatomic cubic crystal with emission of n_1 and absorption of n_2 phonons

in incoherent approximation (Placzek G., Van Hove L., Phys. Rev., 93, 126 (1954)). Using the results of Y. Krumhansl and H. Brooks (Journ. Chem. Phys., 21, 1663 (1953)), formulas for the differential neutron scattering Card 2/4

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Neutron scattering from ...

cross section of graphite are derived from (1). ds/dE is obtained as a power series of 1/2 in the form

$$\frac{d\sigma}{dE} = \sigma_0 \left(1 + \frac{1}{\mu} \right)^2 \sqrt{1 + \frac{8}{E_0}} \sum_{n=0}^{\infty} \left(\frac{1}{\mu} \right)^n \varphi_n (E_0, \epsilon), \tag{27}$$

where

$$\varphi_{n}(E_{0}, \epsilon) = \frac{(a+b)^{n+1} - (a-b)^{n+1}}{2(n+1)b} \sum_{k=0}^{n} \frac{(-1)^{k} v^{k}}{k!} \frac{f_{n-k}(\epsilon)}{(n-k)!}
a = \mu A = 2E_{0} + \epsilon,
b = \mu B = 2V E_{0}(E_{0} + \epsilon).$$
(28)

(Placzek G. Phys. Rev., 93, 895 (1954)). These formulas furnish expressions for the first moments of energy loss, which are analogous to those of Placzek (Phys. Rev., 86, 377 (1952)). The order of the (1/4) and (1/E) terms in these expressions is, however, higher than in Placzek's relations. Denotations: \mathcal{O}_{0} is the neutron scattering cross section for a free nucleus; \mathcal{K}_{0} and \mathcal{K} are the initial and final wave vectors of the Card 3/4

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Neutron scattering from ...

neutron; E and E are the respective energies; q_1 and $e_{q_1t_1}$ are the wave and unit vectors of the polarized i-th phonon; t is the polarization index; $\kappa = k - k_0$, $\epsilon = E - E_0$; $\frac{1}{q_1t_1} = h\omega_1$ is the energy of the i-th phonon; $n = n_1 + n_2$. M. V. Kazarnovskiy (ZhETF, 31, 696 (1956)) is mentioned. There are 5 figures, 1 table, and 15 references: 4 Soviet and 11 non-Soviet. The four most recent references to English-language publications read as follows: Kothari L. S., Singwi K. S., Phil. Mag., 2, 694 (1957); Plazzek G., Van Hove L., Phys. Rev., 93, 1207 (1954); De Sorbo W., Tyler W. W., J. Chem. Phys., 21, 1660 (1953); Placzek G., Phys. Rev., 93, 895 (1954).

Card 4/4

5/903/62/000/000/003/044 B102/B234

ÄUTHORS: Turchin, V. F., Sokolov, Yu. V.

TITLE: The fundamental state of three-or four-particle systems

SOURCE: Yadernyye reaktsii pri malykh i srednikh energiyakh; trudy Vtoroy Vsesoyuznoy konferentsii, lyul' 1960 g. Ed. by

A. S. Davydov and others. Moscow, Izd-vo AN SSSR, 1962, 38-43

TEXT: The authors consider a quantum system of n identical spinless particles of mass m and pair interaction potential $V(r) = kr^2/2$, and determine the function f(r) for the wave function $V=\prod_{i > k} f(r_{ik})$. For this potential

 $f(r) = e^{-\frac{1}{2\hbar}\sqrt{\frac{\hbar m}{\hbar}}r}$ (4), and the ground state energy is given by

 $E = \frac{3}{2}h\sqrt{\frac{k}{m}}\sqrt{n}(n-1). (5).$ By means of the substitution $f(r) = |y(r)|^{\frac{1}{N}}$,

(7) the equation used for determining the eigenvalues becomes

 $y'' + \frac{2}{r}y' + \frac{m}{h^2} \left[\frac{E}{n-1} - \frac{n}{2} V(r) \right] y = 0, \tag{8}$

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The fundamental state of ...

The smallest eigenvalue yields E_0 , called the energy in zeroth approximation. The corresponding wave function will be $\Psi_0 = \prod_{i < k} [y_i(r_{ik})]^{\frac{1}{N}}$, (9). The Schroedinger equation in this case will be $H\Psi_0 = E_0\Psi_0 + \varphi$, φ being a function that vanishes on the diagonal $r_{ik} = r$, and

 $E - E_0 = \frac{\int \phi \Psi^* d\tau}{\int \Psi_0 \Psi^* d\tau}$. (11). For the so-called "fundamental energy" the rela-

tions $\Delta E_1 = E_1 - E_0 = \frac{\int \phi \Psi_0^* d\tau}{\int |\Psi_0|^4 d\tau}$. (12) or $E_1 = \frac{\int \Psi_0^* H \Psi_0 d\tau}{\int |\Psi_0|^4 d\tau}$. (13) will hold. With the trial functions $\Psi = e^{-\alpha(r_{12} + r_{13})} e^{\beta r_{23}}$ (14) for He or helium-like $-\alpha(r_{12} + r_{13} + r_{23})$ (15) for the system considered here in the case of the attractive potential $V(r) = -e^2/r$, numerical calculations are carried out for He, Li⁺, Be²⁺ and the attractive system. This method may be used also for calculating binding energies of lightest nuclei which is Card 2/3

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Atomic Energy)

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The fundamental state of ...

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demonstrated for tritium and α -particles. There are 1 figure and 2 tables.

ASSOCIATION: Fiziko-energeticheskiy institut Gosudarstvennogo Komiteta Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii (Physics and Power Engineering Institute of the State Committee of the Council of Ministers of the USSR of Utilization of

Card 3/3

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0

MARCHUK, G.I.; TURCHIN, V.F.; SMELOV, V.V.; ILYASOVA, G.A.

Methods for calculating the spectra of slow neutrons. Atom.energe.
(MIRA 15:12)

13 no.62534-546 D '62.
(Neutrons—Spectra)

AM4016100

BOOK EXPLOITATION

s/

Turchin, Valentin Fedorovich

Slow neutrons (Medlenny*ye neytrony*) Moscow, Gosatomizdat, 1963. 371 p. illus., biblio. Errata slip inserted. 4000 copies printed.

TOPIC TAGS: slow neutron, neutron, thermal neutron, slow neutron scattering, slow neutron diffusion, neutron diffusion, slow neutron spectrometry, neutron physics

PURPOSE AND COVERAGE: This book is intended for atomic and nuclear physicists, for scientific personnel working in the field of atomic energy, and may also be useful to students in advanced courses in universities and schools of higher technical education specializing in atomic-power-plant engineering. The book deals with slow-neutron physics and its application to building nuclear reactors. The elastic and inelastic neutron scattering in different substances (moderators) as well as neutron diffraction and its application for analysis of atomic and magnetic structure of crystals are discussed. The author thanks Ye. Ya. Doil'nitsy'n G. I. Marchuk, A. G. Novikov,

- Card 1/6

L 14099-66 EWT(m)/EPF(n)-2/EWA(h) DM

Turchin, V. F.

ACC NR: AP6008246

SOURCE CODE: UR/0089/65/019/005/0428/0432

36

ORG: none

AUTHOR:

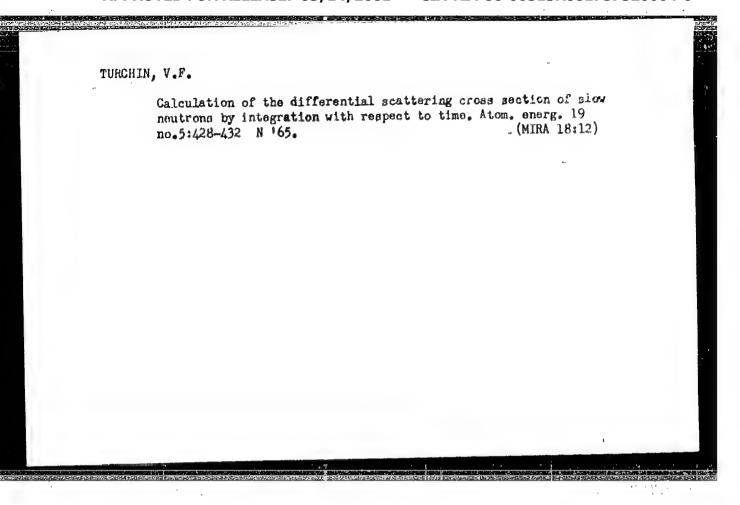
TITLE: Computation of differential cross sections for slow neutron scattering by means of integration with respect to time

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 428-432

TOPIC TAGS: neutron scattering, differential cross section, slow neutron, applied mathematics, integration

ABSTRACT: A method is proposed for calculating the differential cross sections for the scattering of slow neutrons on coupled atoms by means of integration of the Van Hove formula, introducing under the integral sign a cutoff factor which leads to an averaging of the cross section over some energy range, and this result in turn can be used to compare theoretical and experimental data. The method demonstrated enables the differential cross sections for a liquid to be calculated according to a model proposed previously. Calculations for water and ice near the melting point reveal the presence of a discontinuity in the total cross section at the ice-to-water transition; this result agrees with Card 1/2

the experimental data of Heinloth. [NA] SUB CODE: 20, 12 / SUBM DATE: 06Jun65 / ORIG REF: 001 / OTH	REF: 007
SUB CODE: 20, 12 / SUBM DATE: O6Jun65 / ORIG REF: OO1 / OTH	REF: 007
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JD/WW/JG $ENT(\alpha)/EPF(n)-2/EHP(t)/EHA(h)$ IJP(c) BOURCE CODE: UR/3158/65/000/010/0001/0008 1 25702-06 лт6006753 ACC NRE AUTHOR: Liforov, V. G.; Nikolayev, M. N.; Nozik, V. Z.; Parfenov, V. A.; Semenov, ORG: Physics and Power Institute, State Committee on the Use of Atomic Energy, SSCH V. A.; Turchin, V. F. (Fiziko-energeticheskiy institut, Gosudarstvennyy komitet po ispol'zovaniyu atomnoy TITLE: Investigation of inelastic scattering of slow neutrons from zirconlum hydride SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 10, 1965. Issledovaniye neurugogo rasseyaniya mcdlennykh neytronov na gidride tsirkoniya, 1-8 TOPIC TAGS: neutron spectrum, neutron scattering, zirconium ** hydride, neutron spectrometry, slow neutron, scattering cross section, differential cross section ABSTRACT: The article describes measurement of the spectra of neutrons scattered by 2rH1.40 at an angle of 80° to the incident beam, at temperatures 490C and 20C. The measurements were made with a slow-neutron double spectrometer described by I. I. Bondarenko et al. (Inelastic Scattering of Neutrons in Solids and Liquids, Proceedings of a Symposium, Chalk River, 1962). A mechanical interrupter phase with the IBR reactor was used to produce neutron pulses of 75 µsec. The spectrometer resolution was 22.5 $\mu sec/m$ in the elastic-scattering region. The intensity of the monochromatic neutrons at the same measurements was 5 x 10 neut/sec at energy 25 Mev. The measurements were made for neutrons with initial energy 0.02 Mev, the total re-Cord 1/2

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ACCESSION NR: AT5022108

UR/3158/65/000/006/0001/0014

AUTHOR: Turchin, V. F. 44,65

TITLE: Computing differential sections of slow neutrons with the aid of time integration

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 6, 1965. Vychisleniye differentsial nykh secheniy medlennykh neytronov s pomoshch yu integrirovaniya po vremeni, 1-14

TOPIC TAGS: neutron scattering, nuclear energy, neutron density, neutron diffusion, particle scattering, algorithm, computer program logic

ABSTRACT: A method of computing differential scatter sections of slow-moving neutrons by means of crystalline and liquid substances is given. The method features a noncoherent approximation with the aid of direct time integration resulting in an algorithm for programmed computation of the quantities $\frac{d^2 6}{dE d\Omega}$ and $\frac{d\Omega}{dE}$.

The noncoherent Gaussian approximation of the dual differential section of scatter of slow-moving neutrons is given by

d'6 = 6 (m+1)2 (E)/2 E

 $\frac{d^26}{d\Omega dE} = 6. \frac{(M+1)^2}{4\pi M^2} \left(\frac{E}{E_0}\right)^2 e^{-\frac{\pi}{2}} \widehat{S} (q, \epsilon)$

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ACCESSION NR: AT5022108

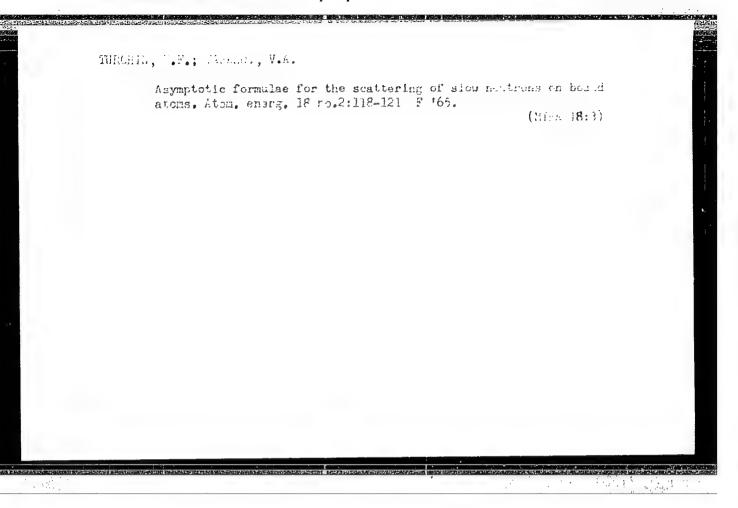
where 6_0 is the scatter section at the free nucleus, M is the atomic mass in neutron mass units, E_0 and E are the neutron energy before and after scatter, and T is temperature of the dispersive medium, and

$$\varepsilon = E_0 - E$$

 $q = \frac{1}{M} (E_0 + E - 2 \cos \theta \sqrt{E_0 E}),$

where Θ is the angle of scatter. A Fourier integral expresses the symmetry-ofscatter law and includes as a term the Van't Hoff autocorrelation function defined for a symmetrical crystal. The direct integration of the scatter integral
is the object of the presentation, and an effort is made to perform the integration with certain simplifications which do not seriously violate the statement
of the scatter law. The model for the computational algorithm was proposed by
the author in "Inelastic Scattering of Neutrons in Solids and Liquids," Vienna
1961, p. 259 and perfected in "Medlennyye neytrony," Gosatomizdat, 1963. The
algorithm bears the mnemonic "PRASSIV" (Program for Computing Sections by Time
algorithm bears the mnemonic "PRASSIV" (Program logic is given. Some experimental data on scatter through ice and water are given. The author calls for
further experimental and theoretical study of neutron scatter through liquids.
Orig. art. has: 18 equations.
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TURCHIN, V. L., Cand of Med Sci -- (diss) "The Special eatures of Internal and Intraarverial Blood Transfusion on the Breathing Function of Blood During the Course of a Traumatic Shood, (Experimental Investigation)

L'vov, 1959, 14 pp (L'vov State Medical Institute) (KL, 5-60, 130)

PETROV, D.G., dotsent; KRIVORUCHKO, R.A.; TURCHIN, V.L.; YEDKINA, V.D.

Centralized supply of flasks with factory produced blood preservatives. Probl.gemat.i perel.krovi no.7:50-53 '61.

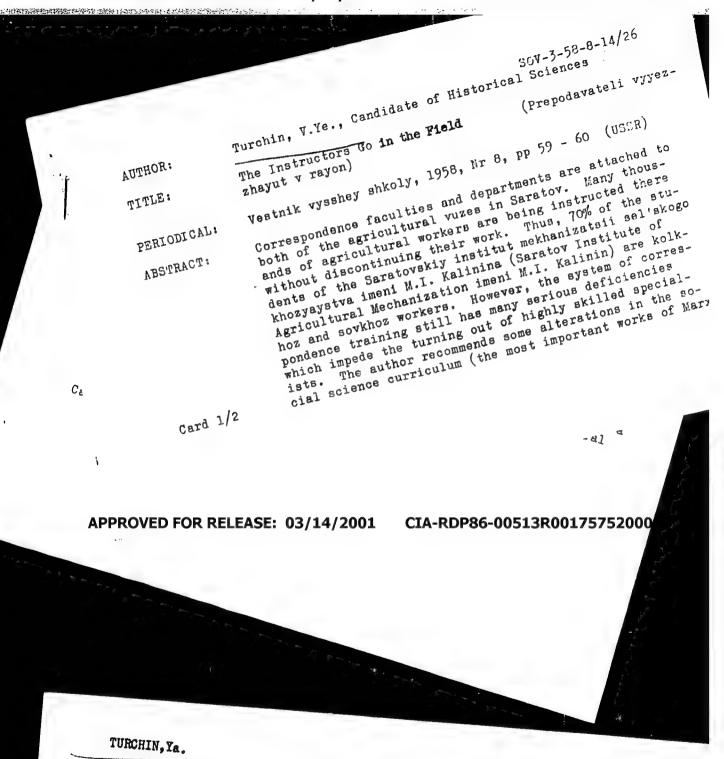
(MIRA 14:9)

1. Iz L'vovskogo nauchno-issledovatel'skogo instituta perelivaniya krovi (dir. - dotsent D.G. Petrov).

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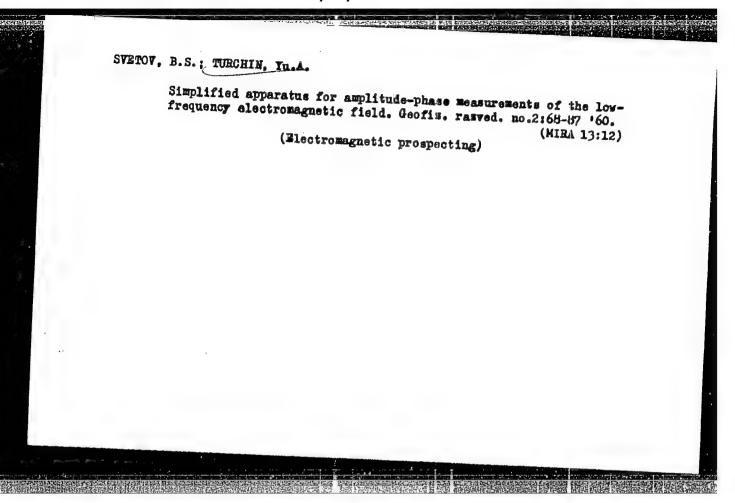
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CIA-RDP86-00513R001757520004-0



Development of Marx's aspect Kapital by V.I.Lenin in The Davelopment of Capitalism in Russia, In Russian. Vestis Latv ak no.4:17-24

(Lenin, Vladimir Ilich) (REAI 10:7) (Marx, Karl) (Russia-Economic conditions) (Capitalism)

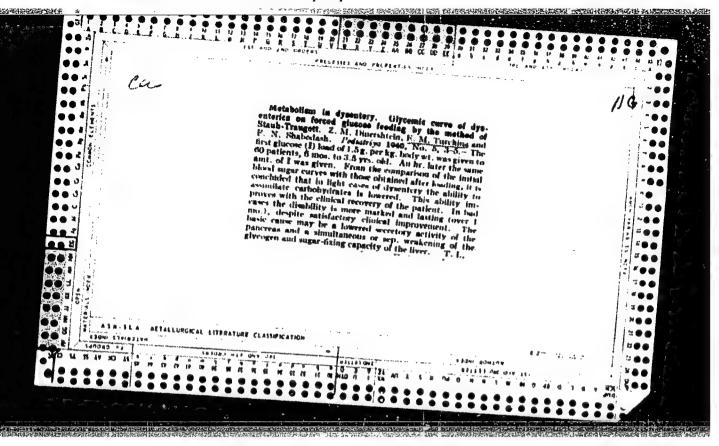


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YEGOROV, G.A.; TIKHONOVA, T.M.; TURCHINA, G.V.

Effect of moisture on the density of the wheat kernel. Izv.vys. ucheb.zav.; pishch.tekh. no.5:17-19 59. (MIRA 13:4)

1. Krasnodarskiy institut pishchevoy promyshlennosti, kafedra tekhnologii zerna. (Grain)



TURCHINA, K. V.

"Some Biochemical Changes in the Blood of Patients Suffering From Constrictions of the Pyloroduodenal Area of an Ulcerous Origin." Cand Med Sci, Khar'kov Medical Inst, Khar'kov, 1954. (RZhBiolKhim, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12) SO: Sum. No. 556, 24 Jun 55

TURCHINA, L. A.: Master Med Sci (diss) -- "Material on the study of the Rh-factor (Experimental-clinical investigation)". Khabarovsk, 1959. 22 pp (Khabarovsk State Med Inst), 220 copies (KL, No 13, 1959, 113)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0"

Cyanine stains in the treatment of certain human and animal helminth infections, survey of the literature. Med.paraz.i paraz.bol. 29 no.1:101-104 Ja-F '60, (MIRA 13:10) (ANTHERMINTICS)

TURCHINA, T.M.; MESHALOVA, A.N., direktor; GRINHAUM, F.T., professor, nauchnyy rukovoditel'.

Yellow variety of the Flexner dysentery bacillus (author's abstract). Zmr. (MLRA 6:9) mikrobiol.epid.i immun. no.7:72 Jl '53.

1. Gor'kovskiy institut epidemiologii i mikrobiologii. (Dysentery)

TURCHINA, T.M.

Resistance of Sonne dysentery bacillus cultures to various disinfectants.

Gig. i san. no.7:48 J1 '54. (MERA 7:8)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok. (SHIGELLA SONNEI) (DISINFECTION AND DISINFECTANTS)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757520004-0"

TURCHINA, T. M.: - "A study of the biological properties of the Sonne dysentery virus". Gor'kiy, 1955. Gor'kiy State Medical Inst imeni S. K. Kirev. (Dissertation for the Degree of Candidate of Medical Sciences)

SO: Knizhnaya Letopis', No. LO, 1 Oct 55

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SAPOZHNIKOV, D.I.; MAYEVSKAYA, A.N.; KRASOVSKAYA-ANTROPOVA, T.A.; PRIALGAUSKAYTE, L.L.; TURCHIHA, V.S.

Effect of anaerobic conditions on changes in the ratio of main carotinoids in green leaves [with summary in English]. Biokhimiia (MIRA 12:4)

1. Botanical Institute, Academy of Sciences of the U.S.S.R., Leningrad.

(LUTEIN) (VIOLAXANTHIN) (PLANTS, EFFECT OF OXYGEN ON)

DUBROVSKIY, V.V., redaktor; KONYUSHKOV, A.M., redaktor; BELITSKIY, A.S., redaktor; BOGOLYUBOVA, B.P., redaktor; DUBROVSKIY, V.V., redaktor; ZHUKOV, A.I., redaktor; KORPICHNIKOV, A.A., redaktor; KONYUSHOV, A.M., redaktor; KULICHIKHIN, H.I., redaktor; SEMENOV, M.P., redaktor; TURK, V.I., redaktor; TURCHINOV, V.T., redaktor; ROSSOVA, S.M., redaktor; GUROVA, O.A., teknnicheskiy redaktor.

[Sinking, equipping and operating wells for the rural water supply; proceedings of the conference of May 18-22, 1954] Sooruzhenie, oborudovanie i ekspluatatsiia skvazhin dlia sel'skogo vodosnabzheniia; trudy Soveshchaniia 18-22 maia, 1954.goda. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nsdr.1955. 220 p. (MLRA 8:11)

Soveshchaniye po voprosam sooruzheniya i oborudovaniya burovykh skvazhin dlya sel'skogo khozyaystva, 1954.
 (Wells) (Water supply, Rural)

FRIDMAN, K.I.; TURCHINA, Ye.L. [Turchyna, O.L.]

Determining copper content of metallic zinc, cadmium and lead-tin solders by means of 2,21-bleinchoninic acid. Khim.prom. [Ukr.] no.2174-75 Ap-Je 65.

Qualitative luminescent analysis method for determining zinc.

[MIRA 18:6]